

Curriculum Vitæ of Alexandre B. Sousa

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CURRENT POSITION

Research Associate

Department of Physics, Harvard University

EDUCATION

Ph. D. in Physics

Tufts University – December 2005

Dissertation on “Studies of $\nu_\mu \rightarrow \nu_e$ Oscillation Appearance in the MINOS Experiment”

Thesis advisor: Prof. Jacob Schneps

M. Sc. in Physics

Tufts University – February 2000

Studies advisor: Prof. Jacob Schneps

Licenciatura em Engenharia Física Tecnológica¹

Universidade Técnica de Lisboa – August 1998

Dissertation on “Aspectos da detecção de raios cósmicos em AMS²”

Thesis advisor: Prof. Ana Maria Mourão

¹The Portuguese “*Licenciatura em Engenharia Física Tecnológica*” is equivalent to a Bachelor of Science degree in Physics Engineering in the American Educational System, and consists of three years of Physics and Mathematics courses plus two years including at least eight advanced courses and two semesters of thesis research.

²Aspects of Cosmic Ray Detection in AMS (Alpha Magnetic Spectrometer).

ACADEMIC AWARDS, GRANTS AND FELLOWSHIPS	Merit Award for Excellent Performance	2007
	Department of Physics, University of Oxford	
	Royal Society Travel Grant	2007
	International Travel Grants Scheme, The Royal Society	
	Outstanding Academic Performance Award	2005
	Graduate School of Arts & Sciences, Tufts University	
	John F. Burlingame Fellowship	September 2004 – June 2005
	Department of Physics & Astronomy, Tufts University	
	PRAXIS XXI Doctoral Fellowship	January 1999 – December 2002
	Fundação para a Ciência e a Tecnologia, Portugal	
PROFESSIONAL POSITIONS	2005 – 2008 Post-Doctoral Research Assistant	
	Sub-Department of Particle Physics, University of Oxford	
	Supervisor: Dr. Alfons Weber	
	1999 – 2005 Graduate Research Assistant	
	Department of Physics & Astronomy, Tufts University	
	Supervisor: Prof. Jacob Schneps	
	1998 – 1999 Graduate Teaching Assistant	
	Department of Physics & Astronomy, Tufts University	
	Supervisor: Prof. Lawrence Ford	
	1997 – 1998 Undergraduate Research Scholar	
	Laboratório de Instrumentação e Física Experimental de Partículas (LIP), Portugal	
	Supervisor: Prof. Ana Maria Mourão	
RESEARCH ACTIVITIES	2011 –	MINOS Deputy Analysis Coordinator
	2010 –	Co-convener of the MINOS Disappearance Group
	2008 – 2011	Co-convener of the MINOS Neutral Current Analysis Group
	2007 – 2009	Coordinator of the MINOS Batch Processing Group
	2010 – 2011	Member of the NOνA ART Committee
	2008 – 2010	Member of the NOνA Calibration Committee

TEACHING EXPERIENCE

2nd Year Further Quantum Physics **Hilary 2008, Trinity 2008**
St. Anne's College, University of Oxford

Senior Demonstrator **January 2007 – June 2008**
Nuclear Physics Practical Course
Sub-department of Particle Physics, University of Oxford

Junior Demonstrator **September 2006 – December 2006**
Nuclear Physics Practical Course
Sub-department of Particle Physics, University of Oxford

Teaching Assistant **September 1998 – December 1998**
Laboratory Supervisor, Physics 1/11 course
Grader, Physics 1/11 recitation sections
Department of Physics & Astronomy, Tufts University

SELECTED PUBLICATIONS

- **First Direct Observation of Muon Antineutrino Disappearance**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. Lett. **107**, 021801 (2011)
- **Active to sterile neutrino mixing limits from neutral-current interactions in MINOS**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. Lett. **107**, 011802 (2011)
- **Long Baseline Neutrino Oscillation Experiments**, A. Sousa, Proceedings of the XXX Physics in Collision Symposium (PIC 2010), Karlsruhe, Germany, arXiv:1102.1125
- **Search for sterile neutrino mixing in the MINOS long-baseline experiment**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. D. **81**, 052004 (2010)
- **Search for active neutrino disappearance using neutral-current interactions in the MINOS long-baseline experiment**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. Lett. **101**, 221804 (2008)
- **Measurement of Neutrino Oscillations with the MINOS Detectors in the NuMI Beam**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. Lett. **101**, 131802 (2008)
- **Study of muon neutrino disappearance using the Fermilab Main Injector neutrino beam**, with P. Adamson *et al.* (MINOS Collaboration), Phys. Rev. D. **77**, 072002 (2008)

- **Observation of muon neutrino disappearance with the MINOS detectors and the NuMI neutrino beam**, with D. G. Michael *et al.* (MINOS Collaboration), Phys. Rev. Lett. **97**, 191801 (2006)
- **Proposal to build a 30 KiloTon off-axis detector to study $\nu_\mu \rightarrow \nu_e$ oscillations in the NuMI beamline**, with D. S. Ayres *et al.* (NO ν A Collaboration), arXiv: hep-ex/0503053 (2004)
- **Measurement of the L/E distributions of atmospheric neutrinos in Soudan 2 and their interpretation as neutrino oscillations**, with M. Sanchez *et al.* (Soudan 2 Collaboration), Phys. Rev. D **68**, 113004 (2003)

SELECTED TALKS

- **Status of NO ν A**, XIV International Workshop on Neutrino Telescopes, Venice, Italy, March 2010
- **Long Baseline Neutrino Oscillation Experiments**, Invited review talk, XXX International Symposium on Physics in Collision (PIC 2010), Karlsruhe Institute of Technology, Karlsruhe, Germany, September 2010
- **Latest Results from the MINOS Experiment**, 22nd International Workshop on Weak Interactions and Neutrinos (WIN '09), Perugia, Italy, September 2009
- **Analysis of Neutral Current Interactions in MINOS: A Search for Sterile Neutrinos**, 2009 Meeting of the Division of Particles and Fields of the American Physical Society (DPF 2009), Detroit, MI, USA, July 2009
- **Newest Results from MINOS**, International Workshop on Next Nucleon Decay and Neutrino Detectors (NNN 08), Paris, France, September 2008
- **Unraveling the Neutrino Mysteries with MINOS**, HEP Seminar, Harvard University, Cambridge, MA, USA, July 2008
- **First Results from Analysis of Neutral Current Interactions in MINOS**, Joint Experimental-Theoretical (Wine and Cheese) Seminar, Fermi National Accelerator Laboratory, Batavia, IL, USA, April 2008